

THE CHEMIST

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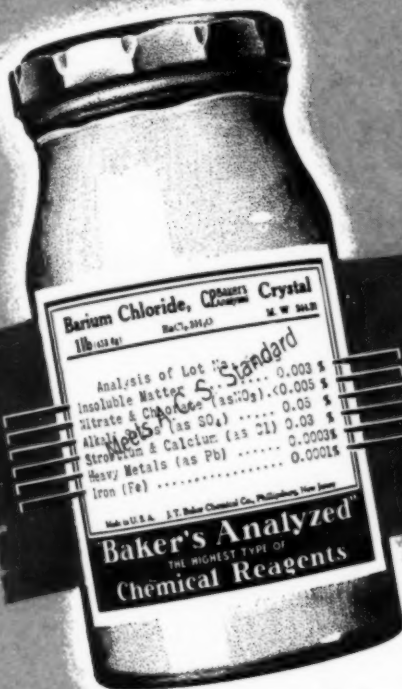


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The Chemist

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Scheduled For Later Issues of The Chemist

"Rewards from Creative Work," by Marvin J. Udy, F.A.I.C.

"Some Factors Affecting Success," by Cary R. Wagner.

Has the Chemist's Professional Status Improved A Survey.

Vocational Guidance Conference. A Report.

Some Letters from 25-Year Members.

Other material.

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Cover Picture

Dr. Johan Björkstén, newly elected chairman of the Chicago Chapter, A.I.C., is president of Björkstén Research Laboratories which he founded in 1944 for sponsored industrial research. From a humble beginning in Chicago's loop district, the organization has grown until it now operates three research laboratories in Chicago. A central laboratory in Madison, Wisconsin, will begin operations this fall.

Dr. Björkstén was born in Finland in 1907. He received the M.S. degree in organic chemistry and the Ph.D. degree in biochemistry from the University of Helsingfors, Finland, in 1927 and 1931, respectively. From 1927 to 1928 he was a guest research worker at the University of Stockholm, Sweden. Under auspices of the International Education Board of the Rockefeller Foundation, he did protein research at the University of Minnesota in 1931-1932.

He was research chemist at the Felton Chemical Company from 1933 to 1934, and chief chemist there from 1934 to 1935. During the following year he was in charge of development for the Pepsodent Company. Most of 1936 and 1937 was spent traveling in Asia, Africa, and South America. From 1937 to 1941, he was chief chemist for Ditto, Inc., in Chicago. He then became chemical director of Quaker Chemical Products Corporation until 1944. He founded Björkstén Laboratories in 1944 and has been president and chairman of the board since 1946. He is a member of the Board of Directors of the ABC Packaging Machine Co., Moberly, Missouri, and of the Bee Chemical Company, Chicago.

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The Future Role of the Analytical Chemist

Dr. Walter J. Murphy, F.A.I.C.

Editor, Analytical Chemistry

(Address delivered at the First Annual Symposium on Analytical Chemistry
Sponsored by Louisiana State University.)

ANALYTICAL chemistry is the fundamental basis upon which the whole chemical structure as we know it today has been built, and built in a highly successful and substantial manner. I have witnessed great changes taking place in the field of analytical chemistry, at the same time sensing that industry, and even the chemical profession as a whole, has failed to grasp the full significance of these evolutionary innovations.

Nevertheless, we must admit that the analytical chemist during the past several decades has been considered a stepchild worthy only of the role of a drudge. The analyst has been somewhat like Cinderella, receiving only occasionally a fair share of the credit bestowed on the chemical profession. The organic chemist, the physical chemist, the biochemist, and the so-called medical scientist have received most, if not all, of the plaudits, while the analytical chemist has returned again and again, disheartened and disgruntled, to the laboratory bench wondering why he fails to win permanent recognition.

We find that the alchemists were

essentially the pioneers of analytical chemistry. Moving from the days of alchemy to the beginnings of modern chemistry, we note that practically all chemistry was of an analytical nature. Quite naturally the first challenge to chemists was the discovery of the component parts of the world in which they lived. Before anything can be understood or synthesized, it must be analyzed and its component parts disclosed.

During the 19th century the chemist's interest centered largely in the work of analyzing naturally occurring materials, and isolating and establishing the identity of many of the elements. Once this basic knowledge was acquired, the emphasis shifted and the spotlight was directed to the organic chemist, and more recently, to the physical chemist. The big names of chemistry prior to the twentieth century were analytical chemists. The analysts of the twentieth century are the unsung heroes of chemistry.

Fifty Years Ago

Fifty or even twenty-five years ago, when a chemist with a bachelor's degree entered upon his professional

career, nine times out of ten it was as an analytical chemist. Probably a more accurate job description would call such an individual a control chemist, or possibly a chemical intern, or chemist in training. The general idea seemed to be that if the new arrival showed real promise, was intelligent, and mentally resourceful, and indicated a high degree of manual dexterity in handling laboratory and scientific apparatus, he could expect to be transferred, or promoted within a reasonable period of time to the research department. The analytical laboratory to all but a few was considered to be a proving ground, a stepping stone to something much better, including better financial remuneration.

Today the tables are largely reversed and the neophyte is generally introduced into his profession via the research laboratory—usually the organic section. I am told that organic chemists are none too happy about this situation and look with disfavor on the use of the research laboratory as a sort of chemical personnel thrashing machine. In practically every large chemical organization that I know of today, technical salesmen and men in technical service, market development and other divisions of merchandising, are graduates of the research laboratory. This is an unsatisfactory situation, but the problem is no longer one involving the analytical laboratory.

There were some logical reasons why, twenty-five or fifty years ago, the analytical laboratory was deemed to be the proper training and classification center. Analytical techniques then were almost wholly volumetric or gravimetric; methods in many instances were not too well standardized, and usually an undergraduate chemist was required, for the work demanded more skill and a greater degree of independent judgment than could be expected of a laboratory technician. The field of analytical chemistry had largely degenerated to the point where its chief purpose was the maintenance of quality standards which essentially meant that the analytical chemist checked the raw materials at one end of the plant, and the finished product at the other. The work of the analytical chemist all too frequently was largely repetitious, usually long-drawn out, tedious, dull, uninteresting, and therefore uninspiring to the true professional. There was little to challenge the inquiring type of mind that is so characteristic of the real researcher, unless he was assigned to research on new analytical procedures and techniques. Frequently such work was carried on by the more inquisitive and ambitious, simultaneously with routine analysis.

In the eyes of management the analytical chemist was a control chemist, and generally speaking, a necessary evil, a burdensome expense that contributed nothing more than

the maintenance of quality. Management was always certain that quality standards could be maintained automatically, if those in charge of purchasing and production would only do their work efficiently.

The Situation Today

Today the situation is much different, yet the legend persists in and out of the profession and particularly in certain top-flight management circles of some companies—far too many, indeed, to be entirely satisfactory to one like myself who is working to improve both the professional recognition and the financial remuneration of chemists.

Advances in the field of analytical chemistry in the past decade or so have been nothing short of phenomenal, but few outside of the profession are aware of this progress. In this period the field of analytical chemistry has undergone profound changes, but these have had little publicity and are none too well understood outside of the confines of the analytical laboratory and by research and production departments.

A Four-Point Program

Last March, the editors of *Analytical Chemistry* offered a four-point program for improving the professional and economic status of the analytical chemist. One of the basic objectives of the program was to achieve a better understanding and appreciation on the part of top-flight management of the function of analytical

chemistry. We recognize that the program was not an overnight cure-all; that it probably was but a partial solution, and certainly does not offer a "quickie-cure" for all the ills that beset the profession of analytical chemistry.

The alternative, unionization, is sometimes mentioned. We have seen laboratory technicians benefit in some ways by acceptance of the union principle, but the true professional does not care for the leveling effect that is one of the essentials of unionization. I must make it clear that I recognize a distinct difference between unionization, as our national labor organizations interpret that term, and organizations formed by those who have professional status. Such organizations usually maintain strict neutrality on salaries, except for seeking provision to bargain on minimum starting salaries.

The question of whether analytical chemists of a professional grade should form bargaining groups is one that should be decided at the laboratory level. In some organizations, they appear to be very necessary; in others, if formed, they would serve no useful purpose. Certainly it is highly desirable that such professional bargaining groups be formed where there is any possibility that those with professional standings are likely to be incorporated into a heterogeneous union. This, I believe, is sound advice and essentially it is the official stand

of the American Chemical Society.

Widespread introduction of instrumentation has caused a sharp division in the analytical laboratory between those of professional and sub-professional training, experience, and ability. Today thousands of analytical procedures are carried on readily by laboratory technicians, utilizing physicochemical and physical methods. The true professional is expected to direct, administer, and to pioneer research in analytical chemistry. The laboratory technician who works with physicochemical procedures, does not necessarily need to understand the basic chemical and physical principles upon which these methods are based. The true analytical chemist must possess more than a mere working knowledge of instrumentation. Today, the analytical chemist must not only be an organic chemist, an inorganic chemist, a physical chemist, a biochemist, a metallurgist, but must also be a physicist of no mean order.

Professionals and Sub-Professionals

In view of the development of two essential although dependent groups within the analytical laboratory, I come to point one in the program offered by the editors of *Analytical Chemistry*. We believe that is highly desirable that a sharp distinct line of demarcation in title between the professional chemist and the laboratory technician be established without further delay. That is not easy to

achieve because some persons with professional degrees fail to develop the requisite originality and leadership required of the professional. Nevertheless, for the over-all good of the profession, the governing factor should be the work the individual is doing, not his array of degrees or lack of them. Exempted from this statement is the chemical intern who may perform sub-professional work for a short period immediately following his entrance into the profession.

In any attempt to differentiate between professionals and sub-professionals utmost care should be exercised and the duties of each individual analyzed by those qualified to do so. Laboratory technicians can be trained to perform certain routine duties utilizing such instruments as spectrophotometers, polarographs, etc., but we are also very much aware that there are specialists who are either physicists or chemists trained in the study of electron microscopy, tracer techniques, infrared spectrophotometry, emission spectroscopy, x-ray diffraction, mass spectrometry, chemical microscopy, polarography, etc., and these individuals rarely, if ever think of themselves as analysts, indeed often resent being so designated, yet they are professional in every sense of the word.

Management must be taught to make title distinctions plainer than in the past through the use of both properly descriptive work titles, and sal-

THE FUTURE ROLE . . .

aries commensurate with the training, experience, and particularly the duties performed and the contributions made to the success of the organization by those with real professional status. One of the most effective and acceptable ways of making plain the distinction between the professional and the sub-professional is via the pay envelope.

Too few companies are equipped to handle problems peculiar and unique to the professional man or woman. Most companies have a labor relations expert, but only a limited number have yet recognized the necessity of employing an expert who knows how to handle professional employees. It is highly desirable that such an individual himself be a man with technical training, background and experience; he also needs a broad outlook and the ability to work with others amicably and constructively. Such a highly trained person can be of great assistance in the smooth operation of any laboratory.

Improve Curricula

The second point in the proposed program was a suggestion that a thorough study be made by competent analytical chemists representing industry, fundamental research, and the teaching profession, looking to the promulgation of an ideal curriculum or curricula for the training of analytical chemists. How many colleges and universities specifically train analysts or grant masters' degrees or

doctorates in analytical chemistry? Fortunately we have had a few individuals such as Furman, Kolthoff, Willard, Mellon, and Lingane, who have maintained by heroic effort keen interest in the science of analytical chemistry, but aside from the institutions where these men reside, the majority of our colleges and universities have specialized in organic and physical chemical research, and analytical chemistry has been sadly neglected.

It is most encouraging to witness the interest that has developed at Louisiana State University in the training of analytical chemists. The general pattern of teaching here may very well influence other institutions in the South and in other parts of the country to place greater emphasis in their curricula on analytical chemistry.

In recent issues of *Analytical Chemistry* we have been publishing a symposium dealing with two simple questions: (1) What is analysis? (2) What is the role of the analysts? It is amazing to note that practically every individual who has contributed to this symposium has touched on the subject of instrumentation. Lingane of Harvard, for example, sums up the situation as he sees it, in the following words:

"No one will deny the increasing importance of physical determinations in modern analytical practice and the concomitant need for more systematic and more extensive methods. Instructions in the established techniques,

such as potentiometric and conductometric analysis, polarography, and spectrophotometry, presents no great difficulties and probably can continue to be provided within the framework of existing chemistry curricula, preferably at the graduate level.

"The science of instrumentation itself presents a larger problem. Month by month in the journal of *Analytical Chemistry* our colleague, Ralph Muller, has been presenting convincing evidence that instrumentation in the broad sense has grown to such proportions that it merits recognition as a new branch of knowledge. Many others share the belief that haphazard instruction in this subject is no longer adequate if we wish to realize its potentialities fully . . ."

We must encourage all interested parties to give more thought to this matter of curricula . . . The question of future training of analytical chemists is of too great importance to be treated lightly. The responsibility rests with the analysts themselves and they cannot permit the present inaction to continue indefinitely, nor can they afford to allow others to make these decisions for them.

Establish Awards

The third suggestion made by the editors of *Analytical Chemistry* was the establishment of at least one award for outstanding work in the field of analytical chemistry, the purpose, of course, to call attention to the importance of the field of analytical chemistry. Such an award was established through the generosity of C. G. Fisher of the Fisher Scientific Company of Pittsburgh. The award is known as the Fisher Award and is

administered by the American Chemical Society.

We should not stop at this point in the matter of awards. It is highly desirable that awards also be established for outstanding analytical work in specific fields, such as petroleum, rubber, essential oils, and aromatic chemicals, to mention just a few. In addition, I hope industry becomes sufficiently conscious of the importance of analytical chemistry to establish quite a large number of postgraduate fellowships in analytical chemistry. Even a selfish viewpoint would dictate to industry the wisdom of training more analytical chemists.

There must be at least twenty-five, possibly fifty, companies which could well afford to establish postgraduate fellowships in the field of analytical chemistry. We need more than fellowships—we need several chairs of analytical chemistry endowed so that we can attract and hold top-notch teachers in the analytical field. If industry fails to undertake support for such training, it will find in the not too distant future that its operations will be severely handicapped through the lack of adequate supply of capable analytical chemists.

Industry has effected tremendous savings by the introduction of new analytical techniques. It cannot hope to continue this trend unless many more highly trained analysts are produced at our colleges and universities

than are being turned out at present. Industry, I fear, fails to realize the seriousness of this situation.

Educate Industry

I now come to the fourth point raised by the editors—consideration of ways and means of educating industry and particularly top-flight management on the true importance of analytical chemistry and analytical chemists. Naturally the support that we ask for analytical chemistry will come more readily when industry does understand more fully the role of the analyst.

I believe we have succeeded in part in educating non-technically trained executives that the analytical department is not just a necessary evil, a nuisance that cannot be eliminated. Today the competent executive understands that competitive position is protected only by maintenance of high quality products and that the analytical department is the constant guardian of the good name and reputation of the company. He probably suspects, if he does not know, that well-trained analysts, armed with the latest instrumental devices, can frequently provide important services for other groups, particularly those engaged in research, production, and technical service.

The analytical chemist and his modern techniques make possible new industries and new processes, frequently make possible the upgrading of old products, and help to eliminate

wastes. The analytical chemist is the guardian of the nation's health and helps to raise health standards. As a result of this and other contributions to society, the analytical chemist is a mighty important individual—he is entitled to greater professional recognition and monetary rewards than frequently has been his lot to date.

Analytical chemists employed by most states, countries, and municipalities are generally much worse off than their associates in private industry. Salaries never high are totally inadequate in the inflationary period we are now experiencing. As a result, good analysts are leaving state, county, and municipal service in substantial numbers. Even a city like New York pays most of its chemists salaries that would be scoffed at by common labor. The American public fails to realize the inherent danger of ignoring the just demands of chemists in public service for a livable wage. These men and women carry great responsibility in guarding the health of this nation. Apparently public opinion must be aroused and we should render every possible assistance in this work.

What Analytical Chemists Do

In the future, analytical chemists will do much more than to establish and maintain standards of quality and purity; the truly professional analytical chemist will do more than develop ways and means of establishing the identity of complex compounds.

Analysts played a leading role in the determination and the proof of structure of penicillin. The entire success of the processing step in the plutonium project was based on the work of the analytical chemist. These classic examples of cooperation (I could name many others) point out to analysts a new horizon of opportunities.

As I talk with chemical engineers, I am impressed with the number of important large-scale processes evolved from analytical procedures. Robert Kunin of The Resinous Products and Chemical Company, Philadelphia, writing on "Ion Exchange" in the third Annual Review of "Unit Operations," in *Industrial and Engineering Chemistry*, January 1948, states, "Although the use of ion exchange in analytical chemistry may not be considered as a unit operation, many important industrial uses for ion exchange have been developed as a consequence of these analytical studies."

H. H. Willard of the University of Michigan is gathering case histories, indicating how frequently large-scale manufacturing operations have been developed based on the work of analytical chemists.

It is highly pertinent to note in the subscription list of *Analytical Chemistry* the large number of readers who identify themselves as chemical engineers. Obviously they have subscribed largely for the purpose of scanning the articles for possible leads

to industrial processes. These indications of comparatively new trends should encourage the analyst to seek in the future a partnership with the research chemist and the chemical engineer that generally has not existed in the past.

The Future

I see a bright future in analytical chemistry for those who are adequately trained to assume posts of responsibility. The field of analytical chemistry is passing through a renaissance period. Much depends upon each individual's approach, upon each individual's psychology. If we maintain an attitude of aloofness, the chemical profession, management, and even the lay public, will continue to think of us simply and solely as control chemists. If we boldly strike out and seek recognition and ask to be made part of the over-all team, we will prove that the analytical chemist has much more to offer than the mere control of quality.

There is an increasing evidence that the analyst is more conscious today than ever of his importance and the contributions he is making to the general welfare of society. This symposia is an encouraging sign, as is also the decision of the Division of Analytical and Micro Chemistry of the American Chemical Society to co-sponsor with *Analytical Chemistry* an annual summer symposium, each such meeting to be devoted to some one particular phase of analytical

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techniques. Our fellow analysts abroad, particularly in Europe, are reviving several publications long respected by the analysts of all nations. In Holland in June an international meeting of analytical chemists was held under the sponsorship of the Netherlands Chemical Society. At the International Union Meeting in London last year, many outstanding analytical chemists of international reputation were present. Probably the greatest interest displayed by any of the commissions within the Union were those which had to do with matters of international interest to analysts, for example, the Commission on Analytical Reagents, Standardization of Laboratory Glassware, etc. . . .

The analytical chemist is faced with a number of pressing problems; problems that he cannot continue to ignore and still hope to retain leadership in the broad field of analysis. Inadequate training in the past, and inadequate training in the future—at least until more colleges and universities recognize the necessity of improving and enlarging their curricula in analytical chemistry, means that the analyst enters his profession inadequately trained to meet modern demands. The swift introduction of physiochemical and strictly physical methods of analysis, has taken many of the old line analytical chemists by surprise. Much of the basic ground work for these newer developments has been accomplished by physicists,

not by chemists grounded in the classical methods of chemical analysis.

I believe there is a strong likelihood that the outstanding analysts a decade hence may be physicists rather than chemists. There are really no good reasons why this should occur other than the unwillingness on the part of those trained in chemistry to acquaint themselves with the basic precepts of physics.

I do not believe that instrumental analysis will ever entirely supersede chemical analysis, and therefore, it is logical to assume that, given proper training, chemists will continue to be the leaders in the field of analysis, but we must recognize the extent of the competition.

Farsighted analytical chemists today see vistas that were entirely unknown and unseen by most analysts a decade ago. Farsighted companies in initiating each research project now include at least one analytical chemist on the team. He is expected to point out pitfalls and to provide advice on a great many matters other than merely perfecting control procedures. Industry is learning the advantages of utilizing the analytical chemist in the role of a consultant, but only after many bitter and expensive experiences.

Salesmanship Needed

The role of the analytical chemist in the future will be just as broad as he himself determines that it shall be. He can remain essentially a control

chemist, or he can seek the role of a consultant. The latter is essentially a job of selling management on what the analyst has to offer.

We are coming to realize in this country that the gap that exists between fundamental research on the one hand and applied research development on the other, is not quite as wide as some of our fundamental scientists would like to have us believe. Applied research, whether it be in the field of analytical chemistry or in some other field of science, is dependent upon fundamental research, yet it is perfectly obvious that frequently work in applied research indicates gaps in our fundamental knowledge and provides considerable incentive for further fundamental research. The reactions in both instances are reversible ones. Today we are proving within the pages of *Analytical Chemistry* that the fundamental researcher in the field of analytical chemistry can associate with the applied researcher without losing caste. Indeed, frequently an author of a paper in fundamental research is also the author of a paper in applied research. Analysts today should avoid schisms. We need to stand united in a broad front and the journal of *Analytical Chemistry* stands ready to speak authoritatively in the interest of analysts in fields of both fundamental and applied chemistry.

The analyst is a notoriously poor salesman. What he needs to learn

most of all to widen the scope of his activity in the future, is the full meaning of the term, "How to win friends and influence people." This attribute can be developed without losing professional dignity. Perhaps, for many, it is a bitter pill to swallow, but in this day and age it is an essential ingredient of success. When we take our wares to the market place, let us make them appear as attractive as possible. Industry is of a mind today to give to individuals just as much responsibility as they will take. The future role of the analyst is to demonstrate a willingness to assume strong leadership.



Salathe Serves as Delegate

Dr. Albert Salathe, F.A.I.C., chairman of the Los Angeles Chapter, A.I.C., served as delegate from THE AMERICAN INSTITUTE OF CHEMISTS to the Inauguration of Dr. Fred Dow Fagg, Jr., as sixth president of the University of Southern California, Alumni Memorial Park, Los Angeles, on June eleventh.

Expansion Plans

Brown Instrument Company, Philadelphia, Pa., plans a \$2,500,000 expansion program to add more than 60 per cent to its manufacturing space and a proportionate increase in employment. The program includes construction of a four-story addition to the main plant at Wayne Junction.

Wetherbee Chemical Sales Representatives

George J. O'Sullivan, vice president and general manager of Allied Asphalt & Mineral Corporation, announces the appointment of Wetherbee Chemical Company, 525 Washington Highway, Buffalo 21, New York, as sales and technical representatives for the Western New York area.

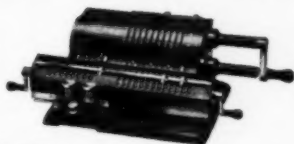
Burt Wetherbee, F.A.I.C., who heads the Wetherbee Chemical Company, has had more than fifteen years of industrial experience, and is a member of many technical groups.

The main office of Allied Asphalt & Mineral Corporation is located at 217 Broadway, New York, N. Y. Their plant is in Dunnellen, New Jersey. They are compounders of pitches, asphalts, waxes, and oils.

McCauliff Receives Golf Trophy

Dr. Eugene McCauliff, F.A.I.C., technical sales director of Glyco Products Company, Inc., Brooklyn, N. Y., won The Chemists' Club Golf Tournament on June eighth, and consequently received possession of the Silver Challenge trophy for one year. As a permanent prize he was awarded a portable radio. Dr. McCauliff is a former tennis champion. He held the U. S. Indoor Doubles Championship in 1933 and 1939, and the U. S. Clay Courts Doubles Championship in 1937.

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Calco Opens New Unit

Calco Chemical Division of American Cyanamid Company announces that the third production unit at the Willow Island plant, West Virginia, is now in operation. This unit produces melamine. Last November the first unit began the production of pharmaceuticals. The second unit was opened in February to manufacture Iron Blue, a pigment used in printing inks and surface coatings.

Othmer Lectures in Switzerland

Dr. Donald F. Othmer, F.A.I.C., professor of chemical engineering and head of the Department of Chemical Engineering of the Polytechnic Institute of Brooklyn, N. Y., presented a series of lectures, which ended June 30th, under the auspices of the American-Swiss Foundation for Scientific Exchange, Inc., at the Federal Institute of Technology of Zurich and other universities in Switzerland. His subject was the role of chemical engineer in industrial chemical manufacture in the United States. He visited France, Italy, Germany, Belgium, Sweden, England, and Spain.

Burrell With Interchemical

Harry Burrell, F.A.I.C. is now head of the Vehicle Group of the Finishes Division of Interchemical Corporation, 57 State Street, Newark, New Jersey.

Merck Establishes Nebraska Sales Headquarters

Merck & Company, Inc., announce that Clifford L. Richards of the general sales staff has established headquarters at Omaha, Nebraska. He was formerly in the Baltimore, Maryland, territory. The Nebraska headquarters also serves Iowa, South Dakota and Wyoming. Kenneth M. Kutz succeeds Mr. Richards in the Baltimore area.

Chemical Trail Blazers

"Chemical Trail Blazers" will be the feature exhibit at the National Chemical Exposition sponsored by the Chicago Section of the American Chemical Society, to be held October 12-16. R. R. Higgins is chairman of the committee supervising the exhibit, which will spotlight research problems and developments. An appeal is being made to individual scientists to present some of their outstanding work through this medium. Exposition headquarters are at 1505 South Wabash Avenue, Chicago 5, Illinois.

Ericks on Council of Technical Societies

Dr. Walter P. Ericks, F.A.I.C., director of research of the Upson Company, Lockport, New York, was elected representative of the Niagara Chapter, A.I.C., to the Council of Technical Societies of the Niagara Frontier, Buffalo, New York.

Visit to a Flax Paper Mill



IN Western North Carolina, in the Valley at the entrance to Pisgah National Forest, there stands a superbly modern industrial plant, the Ecusta Paper Corporation. Its extensive buildings, as mathematically precise as quartz crystals, contrast sharply with the informal farmlands and forest which surround them. Behind the valley are the mountains where tempestuous thunderstorms suddenly shatter the heat of summer.

Ten years ago, the Ecusta lands nourished the tall green corn for which the region is noted. Today, Ecusta is reported to be the largest flax paper manufacturing plant in the world and it produces a large percentage of the cigarette paper made in the United States. This magnificent industrial accomplishment, according to Milton O. Schur, F.A.I. C., Ecusta's research director, is the result of sound scientific research plus business acumen.

Before World War II, approximately ninety per cent of the cigarette paper used in the United States was imported from France, where it was made from linen rags. Among these French manufacturers was Harry H. Straus, now president of Ecusta, who operated Societe Nouvelle des Papeteries de Champagne, at Troyes (Aube), France. He conceived, during the pre-war, unsettled conditions in Europe, the idea of manufacturing cigarette papers in the States, close to the tobacco manufacturers who were his largest customers. But in the United States there was no abundant source of linen rags, so he turned to a consideration of the natural flax fiber itself.

Flax straw in this country was a waste product, left over after the flax seed, from which linseed oil is made, is harvested. It was formerly burned on the fields, because its bast fiber content rendered it a poor feed for livestock. Each straw consists of a very thin outer coat and a hollow, woody core. Between these lie the layer of flax bast fibers, cemented together with a natural resin.

The first step, in 1934, was to establish an experimental farm at Estill, South Carolina, where several varieties of flax and other fiber plants

were grown. The flax fibre was then shipped to the French mill where the paper-making possibilities of the raw fiber were tested. Previous experimentation in the United States on flax paper-making had indicated a yield so low that it seemed to preclude economical operation, and four more years of testing in France showed the tremendous difficulties involved. As Mr. Straus summarized, "We had a terrific time finding out how to use that American raw material—flax fiber, but we finally succeeded."

The Location

In 1938, Pisgah Forest was selected as the location for the manufacturing plant, partly because of its proximity to the large cigarette manufacturing companies, and partly because the Davidson river, which flows from the mountain wilderness of Pisgah National Forest would supply an abundance of unpolluted water. (The name "Ecusta" is the Cherokee Indian word meaning "rippling water". A filter plant, with a daily capacity of 25,000,000 gallons of water was constructed. A spur of the Southern Railroad provides transportation.

The first machine run of flax paper was achieved in 1939, the same day that Hitler marched into Poland.

The Operation

The areas of heavy linseed production are Minnesota, California and neighboring states. In 1947 a total of 4,312,000 acres in the United States



was planted to flax and 39,480,000 bushels of flaxseed were produced. The flax straw is purchased in the Minnesota area and California and decorticated there by special machinery, and then shipped in 150-pound bales to the Ecusta plant. When the fiber arrives, it is stored in one of the thirty-four large warehouses which house over one year's supply. From the warehouses it is placed into huge spherical digesters, where chemical reagents and steam separate the non-cellulose material from the fiber. The resulting pulp is bleached and refined and is converted into paper.

Nine Fourdrinier machines, running twenty-four hours a day, turn out the large rolls of cigarette paper. At

FLAX PAPER MILL

close intervals, the paper from each machine is tested for basic weight, thickness, wet strength, dry strength, porosity, filler content, and opacity. At any hour of the day, seven days a week, more than fifty inspectors constantly scrutinize the running paper for defects in laid mark, discolorations, spots, or any imperfections. The final product must conform to standards of opacity and whiteness, be tasteless, have a burning rate similar to that of tobacco, measure 15/10,000 of an inch thick and yet meet exacting elasticity and strength tests. In addition, it must have a certain moisture resistance and must not stick to the lips.

After the master rolls of cigarette paper are made, they go to the Finishing Department where they are slit into bobbins. This department has a capacity of more than 20,000 bobbins a day. The bobbins are then shipped to the cigarette companies, who wrap 85,000 cigarettes with the paper from each bobbin.

The Officers

The officers of the Corporation, in addition to President Straus, are vice president, treasurer, and director Thomas N. Word; director, Robert M. Hanes, who is also president of the Wachovia Bank and Trust Company, of Winston-Salem; and vice president, general counsel and director, Walter M. Schwarz.

The Scientific Setup

The Chemistry Division is divided into three departments. In the Fundamental Research Department, studies are carried on concerning the characteristics of cellulose, control tests are developed, and new materials are considered. The Applied Research Division operates a pilot plant, complete with standard paper-making equipment in miniature, for the application of new or improved processes. The Analytical Department analyzes raw materials, prepares special chemicals, and maintains operating standards.

Milton O. Schur, F.A.I.C., who succeeded the late Dr. Fritz L. Straus in 1944 as director of research, is a graduate of Massachusetts Institute of Technology and for more than twenty years was research chemist and technical director of the Brown Company of Berlin, New Hampshire. He holds approximately one hundred patents, both foreign and domestic, on various phases of paper pulp manufacture and utilization. Many of these have been widely adopted by the industry.

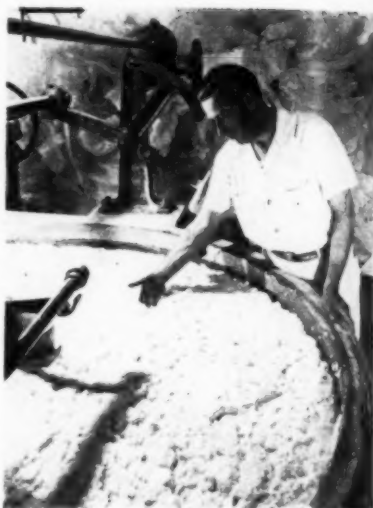
Several score of chemists work under his direction where they are expert in performing the exacting technical control and the many special tests which paper-making requires. The laboratories contribute a fair number of technical papers to the literature. They have also developed a rapid viscosity test for the degree

of polymerization of cellulose. The solvent is prepared by Ecusta and also supplied to other paper manufacturers.

An Agricultural Research Department is maintained where fundamental researches on the botany, genetics, and culture of flax are carried on. Its objectives are "High seed yield, high fiber yield, ease in decortication, and pulping efficiency." Flax research projects are financed at the University of Minnesota. A field agronomist works with farmers and state and federal agencies to improve flax crops.

Ecusta's Personnel

Ecusta employs some seventeen-hundred persons. Employees for the paper-making operations come largely from the North Carolina mountains. They have proved to be exceptionally intelligent, learn the intricate operations rapidly, and are intensely loyal. Some are adept at inventing special apparatus or machinery to improve the traditional methods. They enter enthusiastically into inter-company contests such as baseball, softball, basketball and bowling. A large library is maintained for them. A children's band furnishes music for various occasions and the members receive music lessons and instruments without charge. Vacation and recreational facilities, including many sports, are provided at Camp Sapphire recreational area for employees and their families. Medical attention and life insurance are supplied. A house organ, "The Echo," is published.



Ecusta also contributes generously to Brevard Junior College and to the Brevard Hospital.

Ecusta's whole plant is almost unbelievably neat and clean. Offices, recreation hall, cafeteria, library, laboratories and other rooms, have been decorated according to the best principles of interior decoration. The personal touch is supplied by President Straus. He has a fondness for mottos. Such slogans as "When you get an O K, get it in writing," "One test is worth a thousand guesses", "Quality First, Then Quantity—Not How Much, but How Well", "Certainly, It can be done, it will be done, it must be done", "Results Through

FLAX PAPER MILL

Research", appear unexpectedly on the walls.

He summarizes Ecusta's personnel policy as based on three beliefs, "that unceasing effort be devoted toward making Ecusta a happier and more profitable place for men and women to work.

"That Ecusta continue to help every employee to safeguard himself against the problems of intermittent employment, sickness, accidents and old age.

"That Ecusta, through careful selection and meticulous placement, take advantage of every opportunity for the recognition of each individual's progress." That could explain why those who work at Ecusta speak so proudly of their jobs and of their company.

In addition to cigarette paper for the "tailor-made" cigarettes, booklets are made for those who roll their own, and exquisite book, Bible, air mail, and writing papers are also produced. For a sample of Ecusta flax products, inspect the paper around the nearest cigarette—any popular brand.



Collier Honored by Johns-Manville

Simon Collier, F.A.I.C., was inducted recently into the Johns-Manville Quarter Century Club, honoring those with twenty-five years' service with the company. He is director of quality control at Johns-Manville.

Sargent Issues New Publication

E. H. Sargent & Company, 155-165 East Superior Street, Chicago 11, Illinois, will publish *Scientific Apparatus and Methods* quarterly. Its purpose is to present original articles of interest to the chemical profession; to present new and interesting laboratory apparatus, and to provide a supplement to the company's catalog of scientific laboratory equipment and chemicals. The first issue, Summer Edition 1948, features: "Conjunctive use of Electrodeposition and Polarography;" "Assembly of an Instructional Polarograph;" "Reproducibility of Polarographic Curves;" "Stirring Seals," and "Sargent Assembly Support System."

Griffith Re-elected President

Dr. Ivor Griffith, F.A.I.C., has been re-elected president of the Philadelphia College of Pharmacy and Science, Philadelphia, Pennsylvania.

Vahlteich Appointed

Dr. Foster D. Snell, F.A.I.C., chairman of the fall meeting of the American Oil Chemists' Society, announces that Dr. H. W. Vahlteich, vice president in charge of research and quality control, Best Foods, Inc., has been appointed vice chairman of the meeting. The fall meeting will take place in New York city, November 15th to 17th, inclusive. Dr. Vahlteich replaces the late Dr. J. J. Mattiello, F.A.I.C.

Monsanto Program for Teachers

Francis J. Curtis, F.A.I.C., vice-president of Monsanto Chemical Company announces the inauguration of a program which will permit university and college faculty members in chemical engineering to gain a year's on-the-job experience in the chemical industry. Teachers chosen for participation in the program will be paid the salary customarily paid for comparable jobs within the company. The motivation for the plan is to give younger teachers practical experience in industrial operations. This experience will be utilized in teaching successive classes of students over a period of years. While some teachers occasionally serve as consultants, they do not thus gain first-hand knowledge of plant operations. Teachers will be expected to resume their faculty affiliations for at least one year at the conclusion of their Monsanto service.

Mr. Curtis stated that it is the hope of Monsanto that other companies in the chemical industry will institute similar programs in a collective effort to blend practical industrial experience on the part of academic instructors with the normal academic education.

Slates with Merck

Harry L. Slates, M.A.I.C., is now organic chemist in development research for Merck and Company, Inc., Rahway, N. J.

The Responsibility of Engineering Schools

Dean James Kip Finch of Columbia School of Engineering writes in his new book, "Trends in Engineering Education," that while American engineers have led the world in technical ingenuity, they have relied to a major extent on European workers for fundamental discoveries. To remedy this, engineering schools must greatly increase their interest in graduate study. This loss of basic research from Europe has placed an extremely important responsibility upon American schools of engineering.

Hercules Inaugurates Plant Tours

Hercules Powder Company inaugurated a series of tours of several of its plants and laboratories for student chemists, chemical engineers and their professors. Dr. Emil Ott, F.A.I.C. Hercules' director of research, and other staff members, arranged the visits to promote better understanding between university and industrial research men. The trips provide an opportunity for the university groups to see how research is integrated with chemical production.

Heyden Opens New Unit

Heyden Chemical Corporation has entered the streptomycin field on a large scale with the opening of a new unit of its plant near Princeton, N. J. Research on other antibiotics will also be continued in the new laboratories of the unit.

Communications

Articles Appreciated

To the A.I.C.:

The articles in the Silver anniversary issue of *THE CHEMIST* were particularly valuable to a new-comer in the field of chemistry. Information regarding the changing trends and progress in various phases of work is not readily available, yet it is very important for the new-comer to have a "bird's-eye" view of the professional and scientific objectives of the workers in this field. Such a view was given by the carefully written articles in the special issue, and my young friends and I congratulate you on them.

—Sylvia Massenberg, A.A.I.C.

Facts or Opinions?

To the Editor:

Dr. Richard P. Welcher's letter in the August issue of *THE CHEMIST* raises two questions.

(1) Are we going to carry on controversies between chemists in a pleasant and courteous way or are we going to throw brickbats at each other?

(2) Would it not be best to conduct our discussions on the high plane of scientific fact-finding, with the emphasis on *what* is right rather than *who* is right?

Speaking to the first question, I regret Dr. Welcher's tone and his use of such phrases as "He (Dr. Jones)

has unfortunately included several untruths;" or, "I believe that Dr. Jones . . . might . . . set his own house in order."

As to the second question, should the *Encyclopedia Britannica* be quoted by scientists as a source of factual evidence? Moreover, should mere statements be presented as facts, merely because they are printed in its volume? The *Encyclopedia Britannica* is written by individuals, whose personal judgment may be right or wrong. When the *Encyclopedia* states that the phrase "dark ages" has now become obsolete, does the contributor state a fact, or a debatable opinion?

Dr. Welcher quotes the *Encyclopedia Britannica* as an infallible authority on history. I suggest he read the story of the famous Koeniginhof manuscript under the heading "Masaryk," in the 14th Edition.

I recommend that we leave the quoting of authorities to lawyers. Chemists, I hope, will not allow facts to be replaced by opinions, nor courtesy by offensive words.

—Dr. Otto Eisenschiml, F.A.I.C.

Schaffroth to New England

Robert E. Schaffrath, A.A.I.C., received the M.S. degree from Syracuse University in September. He is now instructor at New England College, Henniker, New Hampshire.

The A.I.C. Gold Medal

Each year The American Institute of Chemists awards a medal "for noteworthy and outstanding service to the science of chemistry or the profession of chemist in America.

The recipient is chosen by the Jury of Medal Award, whose members are specified by the By-laws of the A.I.C. to be the active president, the three immediately preceding eligible past presidents, and the secretary of the Institute. The present Jury of Medal Award thus consists of Dr. Harry L. Fisher, chairman; L. H. Flett, Dr. F. D. Snell, Dr. Gustav Egloff, and Dr. Lloyd Van Doren.

Previous recipients of the Gold Medal are: William Blum (1926); Lafayette B. Mendel (1927); Mr. and Mrs.

Francis Patrick Garvan (1929); George Eastman (1930); Andrew W. and Richard B. Mellon (1931); Charles H. Herty (1932); Henry C. Sherman (1933); James Bryant Conant (1934); Marston T. Bogert (1936); James F. Norris (1937); Frederick G. Cottrell (1938); Gustav Egloff (1940); Henry G. Knight (1941); William Lloyd Evans (1942); Walter S. Landis (1943); Williard H. Dow (1944); John W. Thomas (1945); Robert F. Russell (1946); M. L. Crossley (1947); and Charles Allen Thomas (1948).

A.I.C. members who know of someone worthy of this award in 1949 are asked to submit the name and pertinent data to the Chairman of the Jury on Medal Award.

Universal Appoints Secretary

David W. Harris, president of Universal Oil Products Company, Chicago, Illinois, announces that Stanley R. Wilson has been appointed secretary of the company. During the war, Mr. Wilson was in charge of all Universal's contract negotiations with the government, and since then he has been in charge of the contract department of the company.

Connor with Ohio Boxboard

C. M. Connor, M.A.I.C., is now manager of the Research and Development Department of the Ohio Boxboard Company, Rittman, Ohio. Mr. Connor was formerly manager of the Pennsylvania mills of the Glassine Paper Company. During the war he was a member of the Pulp and Paper Technical Advisory Committee of the War Production Board.



COUNCIL

OFFICERS

President, Lawrence H. Flett

Secretary, Lloyd Van Doren

Vice-president, Raymond E. Kirk

Treasurer, Frederick A. Hessel

COUNCILORS

M. J. Bahnsen, *Ohio Chapter*

C. P. Neidig, *At-Large*

M. L. Crossley, *At-Large*

E. H. Northey, *At-Large*

Gustav Egloff, *Past President*

L. F. Pierce, *Los Angeles Chapter*

Karl M. Herstein,

Donald Price, *At-Large*

New York Chapter

Charles W. Rivise,

Lester F. Hoyt, *Niagara Chapter*

Pennsylvania Chapter

Donald B. Keyes, *At-Large*

Royal E. Rostenbach,

R. H. Kienle, *At-Large*

Washington Chapter

Harold A. Levey,

Maurice Siegel, *Baltimore Chapter*

Louisiana Chapter

Foster D. Snell, *Past President*

H. W. Mackinney,

Charles L. Thomas, *Chicago Chapter*

New Jersey Chapter

J. M. McIlvain, *At-Large*

James R. Withrow, *At-Large*

Lincoln T. Work, *At-Large*

September Meeting

The 249th meeting of the National Council, A.I.C., was held September 8, 1948, at The Chemists' Club, New York, N. Y., with President Lawrence H. Flett presiding. The follow-

ing officers and councilors were present: L. H. Flett, K. M. Herstein, F. A. Hessel, J. M. McIlvain, H. W. Mackinney, D. B. Keyes, R. H. Kienle, C. P. Neidig, C. W. Rivise, and L. Van Doren. V. F. Kimball was present.

The minutes of the previous meeting were approved. The treasurer's report was accepted.

President Flett announced that Dr. Charles L. Parsons had expressed his pleasure at being selected for Honorary membership in the A.I.C., and that the presentation would be made on October 20th at a joint meeting of the New York Chapter, A.I.C., the New York Section of the American Chemical Society, and the American Section of the Society of Chemical Industry, at the Downtown Athletic Club, New York, N. Y.

President Flett suggested that it would be desirable to have one Honorary Member selected by each Chapter during the year. He asked that names of suggested Honorary Members be sent to the Chairman of the Committee on Honorary Membership, Dr. Lincoln T. Work.

It was announced that a panel of Institute speakers would speak to the graduate class in guidance of the Department of Education of New York University, September ninth, on vocational guidance for chemistry students. Panel members were Mr. Flett, Karl M. Herstein, Dr. Raymond E. Kirk and Dr. H. G. Lindwall.

Dr. Hessel stated that Queens College had asked the names of possible speakers for the undergraduate Students Conference. This was referred to Mr. Herstein who heads the New York Chapter's Student Relations Committee.

The following Committee on Activities of Younger Members was appointed: Charles P. Neidig, chairman; Charles J. O'Boyle, Robert B. Boyd, Dr. George L. Royer, Dr. Donald B. Keyes, Byron N. Thompson, and Dr. H. W. Stiegler.

President Flett announced that he expects to speak before members of the A.I.C. in Pittsburgh on October sixth.

The Secretary reported that we now have a total membership of 2269.

A letter from the Secretary of the Chicago Chapter was presented, wherein it was suggested that the National Council formulate a policy concerning the essential activities of chemists and so advise the President of the United States in connection with draft legislation. It was also suggested that a non-military board be recommended to consider deferment of scientific personnel. After discussion, this suggestion was referred to the Committee on Activities of Younger Members.

The Secretary announced that the amendments to the Constitution, passed at the Annual Meeting, had been ratified by a mail vote of Fellows of the Institute.

An invitation from Clarkson Memorial College of Technology, Potsdam, N. Y., asking the A.I.C. to send a delegate to the inauguration of its president, October 10th, was referred to President Flett.

Mr. Rivise, counselor from the

COUNCIL

Pennsylvania Chapter, asked for suggestions for Chapter activities. Mr. Herstein suggested that the work of his committee in the New York Chapter Committee on Student Relations might be interesting. The higher institutions of learning might welcome Institute speakers and information about the profession of chemist. President Flett stated that the strength of the Institute lay in its chapters, and he urged chapter reporters and individual members to send in an account of their activities to *THE CHEMIST*, so that other members will know what they are doing.

Mr. Herstein reported that last year a list of speakers was suggested to the various schools in this area. This year plans are being made to create a panel, of perhaps five speakers, to appear before college groups. Another suggestion for Chapter activities was the formation of a committee to handle applications for employment and to which employers could go in seeking chemists.

Dr. Keyes remarked that one of the attitudes which holds back chemists from achieving true professional status is the tendency to ask what good he can get out of an organization rather than what he can do for the organization. It is notable that those who work with and through organizations gain a great deal, whereas those who withhold themselves from activities gain very little. He also suggested that meetings be

held by the Chapters where the younger members are free to talk and discuss ideas which may occur to them.

A letter from Ralph T. Nazzaro was read, and it was suggested that Mr. Nazzaro be asked to write up his views for publication in *THE CHEMIST*.

The Committee on Qualifications was requested to suggest changes to be made on the application blanks. Among the suggestions made were: a statement should be added to the effect that preferably one reference should be a member of the A.I.C., and the revised qualifications for membership should be included. It was also suggested that a question be placed on the reference blank which only members of the A.I.C. could answer, for example: "If you are a member of the A.I.C. for which membership classification do you think the applicant is qualified?"

The following new members were elected:

FELLOWS

Allen, Clyde Charles

Director, Research - Development Laboratory, Anderson - Prichard Oil Corp., 100 Apco Tower, Oklahoma City, Oklahoma.

Breuer, Frederick W.

Head, Synthetic Section, Armstrong Cork Company, Lancaster, Penna.

Clay, John Paul

*Assistant Professor of Chemistry,
Hunter College of City of New
York.*

Curado, Joseph George

*Senior Research Chemist, Group
Leader, Sun Chemical Corp., 100
6th Avenue, N. Y., N. Y.*

Dziewiatkowski, Dominic D.

*Assistant Professor of Biochemis-
try, Johns Hopkins University,
School of Hygiene and Public
Health, Baltimore 5, Maryland.*

Faull, J. Horace, Jr.

*Research Director, General Latex
and Chemical Corporation, Cam-
bridge, Mass.*

Fort, Marron William

*Chief Chemist and General Mana-
ger, A. & G. J. Caldwell, Inc.,
Newburyport, Mass.*

Free, Alfred H.

*Head of Biochemistry Section,
Research Laboratory, Miles Labs.,
Inc., Elkhart, Indiana.*

Geiger, Marion Braxton

*Secretary and Works Manager,
Oldbury Electrochemical Co. Box
346, Niagara Falls, New York.*

Gibney, Robert Bernard

*Member of Staff, Los Alamos
Scientific Laboratory (Univ. of
California) Los Alamos, New
Mexico.*

Givens, John Wilkinson

*Assistant Department Head, Shell
Development Company, Emery-
ville, California.*

Glenk, Robert

*Director Emeritus, Louisiana State
Museum, Cabildo, Jackson Square,
New Orleans, Louisiana.*

Gloor, Walter Ervin

*New Product Development, Her-
cules Powder Company, Wilming-
ton, Delaware.*

Goldblatt, Leo Arthur

*Chemist, Bureau of Agricultural
and Industrial Chemistry, U. S.
Department of Agriculture, 2100
Robert E. Lee Blvd, New Orleans,
Louisiana.*

Greenewalt, Crawford Hallock

*President, E. I. duPont de Nem-
ours & Company, Inc., 9042 Du-
Pont Bldg., Wilmington 98, Del-
aware.*

Haigh, Frederick R.

*Chief Chemist, Botany Mills, Inc.,
Passaic, New Jersey.*

Hamer, Walter J(ay)

*Chemist (Electrochemist), Na-
tional Bureau of Standards, Wash-
ington, D. C.*

Hammar, Harald Edwin

*Associate Chemist, U. S. Depart-
ment of Agriculture, U. S. Pecan
Field Station, P. O. Box 84, Al-
bany, Georgia.*

Jurgensen, Delbert F.

*Manager, Chemical Research and
Development Department., Ameri-
can Machine and Foundry Co.,
170-53rd Street, Brooklyn 32,
New York.*

COUNCIL

Kaiser, Emil

Research Chemist, Armour and Company, Chicago 9, Ill.

Kauffman, Hans O.

Chief Chemist in Charge of Research, Buffalo Electro-Chemical Co., Inc., Station B, Buffalo 7, New York.

McKinney, Paul V (incent)

Research Director, Sun Chemical Corporation, 100 Sixth Avenue, New York 13, N. Y.

Meuly, Walter C.

Chemical Superintendent, DuPont de Nemours and Company, New Brunswick, N. J.

Phillips, Ralph Flint

Assistant Scientific Director, Sugar Research Foundations, New York 5, N. Y.

Russell, Kenneth Lyman

Director of Toilet Articles Division, Research Development Dept., Colgate-Palmolive-Peet Company, Jersey City, N. J.

Sharefkin, Jacob G.

Instructor, Brooklyn College, Brooklyn 10, N. Y.

White, Wilfrid Francis

Head, Section for Liver Research, Armour Laboratories, Chicago, Illinois.

Wollner, Herbert J.

President, American Conditioning House, Inc., 11 Melcher St., Boston, Mass.

York, Foster

Patent Attorney, Zabel and Gritzbaugh, Chicago, Illinois.

MEMBERS

Lerner, Louis L.

Executive Vice President and Technical Director, Allied Home Products Corp., Beloit, Wisconsin.

Self, M. A.

Sales Manager, Bee Chemical Company, 63 E. Lake Street, Chicago 1, Illinois.

Stephanoff, Ilya

Chemist, City of Chicago, Water Purification Division, South District Water Filtration Plant, 3300 E. Cheltenham Place, Chicago, Ill.

Stivale, Joseph J., Jr.

Technical Service, Industrial Research Division, Brooklyn Varnish Manufacturing Company, 50 Jay Street, Brooklyn 1, N. Y.

Sukow, Donald Newton

Research Chemist, Columbia Chemicals Division, Pittsburgh Plate Glass Company, Barberton, Ohio.

Walls, Donald J.

Technical Director, United Gilsonite Laboratories, Scranton, Pa.

Yater, Joseph T.

Paint Superintendent, Standard Varnish Works, Staten Island, New York.

ASSOCIATES

Hutson, Paul Gilliss

Control Analyst, Esskay Company, 3800 E. Baltimore Street, Baltimore 24, Maryland.

Pattison, Burt O.

Director, Pattison's Southwest Laboratories, 211 E. Monroe St., Harlingen, Texas.

Ray, Leonard Nixon, Jr.

Research Assistant, The Pennsylvania State College, State College, Pa.

**RAISED FROM ASSOCIATE
TO MEMBER****Clark, Ronald L**

Fellow, Corn Products Fellowship, Mellon Institute of Industrial Research, Pittsburgh 13, Pa.

There being no further business, adjournment was taken.

Chapters

The Washington Chapter met May 28th in the small dining room of Avignone Freres, 1777 Columbia Road, N. W. Dr. Eduard Farber, chairman, presided.

After approval of the minutes of the previous meeting, C. W. Whittaker, chairman of the nominating committee for officers, reported that the following nominees had been chosen: Chairman, Royal E. Rostenbach; Vice chairman, Thomas H. Tremearne; Secretary, Elizabeth M. Hewston, and Treasurer, Jeffrey R. Stewart. An opportunity was afforded for nominations from the floor but none were made. Upon motion, the Secretary was thereupon instructed to

Council Meeting Dates

Meetings of the National Council of THE AMERICAN INSTITUTE OF CHEMISTS are scheduled to be held at 6:00 p. m. at The Chemists' Club, 52 East 41st Street, New York 17, N. Y., on the following dates:

October 19, 1948

November 10, 1948

December 8, 1948

cast a unanimous ballot for the officers recommended by the nominating committee. The treasurer's report was accepted.

The new vice chairman, T. H. Tremearne, then assumed the chair in the absence of the new chairman.

The scheduled program for the evening consisted of reports by members on their hobbies. John W. McBurney spoke on gems and gem collecting, and displayed some of his collection. Dr. C. W. Whittaker spoke on pistols and pistol shooting as a sport and displayed some antique and modern handguns. E. F. Snyder spoke on piano playing and painting as hobbies. Other members also spoke briefly, and the discussion was lively and interesting.

For Your Library

Encyclopedia of Chemical Technology

Vol. I (A—Anthrhimides)

Edited by Raymond E. Kirk, F.A.I.C. and Donald F. Othmer, F.A.I.C., Interscience Publishers, Inc. xxiv plus 982 pp. \$20.00.

In commencing the enormous labor involved in the preparation of an *Encyclopedia of Chemical Technology*, the editors point out that there is no such encyclopedia in English which represents modern American practice. This obviously means that there is a great need for a work of this kind. As planned by the editors, the present work will fill this demand to meet the strictest requirements.

The plan of the editors is to have each article written by a contributor who is a specialist in his field. The articles themselves vary from background material in very broad fields to the details which are necessary for complete coverage of each special subject. By following this plan, a work has been produced which bids fair to outrank Muspratt, Thorpe, or Ullman in readability and informativeness as it does in timeliness. Physically the book is a pleasure to handle. A good grade of glossy book paper has been used. The typography is clear and the usual aids of bold faced type, diagrams both of chemical structures and flow sheets, etc., are freely used.

A division of each page into two columns might increase legibility.

Each article in the book is followed by a bibliography, which although not exhaustive will serve very well as the key to the special literature.

The reviewer is informed that the demand abroad for this book is enormous. He feels that in this country it should be an indispensable tool in schools, technical libraries, and on the shelf of every chemist whose work extends beyond the narrowest specialization.

The editors and publisher deserve the gratitude and thanks of the entire profession for the splendid work they are carrying out. The next volume, number II, will probably be available when this review appears.

—Karl M. Herstein, F.A.I.C.

Theory of Lyophobic Colloids

By E. J. Verwey, J. Th. G. Overbeek, and K. van Nes. Elsevier Publishing Company. 1948. 205 pp. 6½" x 9½". \$4.50

An advanced theory is developed for emulsions, hydrophobic colloids and suspensions, wherein the electric-double layer concept is used. The authors are closely associated with the famous Van't Hoff Laboratories in Utrecht, Holland.

—Dr. John A. Steffens, F.A.I.C.

Chemical Engineering Economics

By Chapin Tyler. McGraw-Hill Book Company. 321 pp. 6½" x 9½." Third Edition. \$4.00

This is a standard text on chemical engineering economics which covers the subject quite thoroughly, from the standpoint of making a new product pay. Written in a period of changing prices, the reader will need to supply the corrections for the newer price levels as they occur. The collaboration of fourteen experts brings in other viewpoints and broadens the appeal of the book. The facts are simply and concisely presented.

— Dr. John A. Steffens, F.A.I.C.

Fatty Acids—Their Chemistry and Physical Properties

By Klare S. Markley. Interscience Publishers, Inc. 1947. 668 pp. 9¼" x 6¼." \$10.00.

The author is principal chemist of the Oil, Fat, and Protein Division, Southern Regional Research Laboratory, United States Department of Agriculture, New Orleans, Louisiana.

The purpose of this volume is to bring together in an organized and readily accessible form as much as possible of the present accumulation of facts and data pertaining to the chemical reactions and physical properties of the fatty acids. Emphasis is placed on the long chain fatty acids which form the basis of all natural fats, oils, and waxes, but the lower

members of the fatty acid series have not been entirely ignored.

The material which thus has been made available should eliminate many hours of literature search by all those who are interested in the fatty acids and their numerous products and by-products.

—William H. Van Delden, F.A.I.C.

A.S.T.M. Standards on Paint, Varnish, Lacquer, and Related Products

By the American Society for Testing Materials. Dec. 1947. Issued 1948. 580 pp. \$4.35.

This sixth edition of the compilation of A.S.T.M. Standards gives 170 specifications, tests, and definitions. Forty-five specifications cover various types of pigments—white, black, mineral iron oxide, blue, green, yellow and orange, red, metallic, etc. Nine specifications and five test methods relate to drying oils, paint driers, and thinners; Twelve cover shellac, varnish and varnish materials. In the field of lacquer and lacquer materials, there are 21 specifications and 11 test methods. A section of the book covers general paint tests and paint weathering tests. Other standards cover putty, rosin, liquid naval stores, etc.

The specifications and tests are the result of the work of ASTM's Committee D-1, which has added some 12 new specifications and tests and revised about 50 since the publication of the 1946 edition of this compilation.

Books Announced

"The Preparation, Properties, Chemical Behavior, and Identification of Organic Chlorine Compounds" by E. H. Huntress. 1443 pp. Summary. 2300 references. \$27.00. John Wiley and Sons, Inc., 440 Fourth Avenue, New York 16, N. Y.

"Chemistry of Insecticides, Fungicides and Herbicides" by Donald E. H. Frear. 448 pp. Illus. \$6.00 D. Van Nostrand Company, Inc., 250 Fourth Avenue, New York 3, N.Y.

"Advances in Enzymology. Vol. 8." Edited by F. F. N. Nord. 546 pp. Illus. \$8.00 Interscience Publishers, Inc., 215 Fourth Avenue, New York 3, N. Y.

"Colorimetric Methods of Analysis" by Foster Dee Snell, F.A.I.C., and Cornelia T. Snell. 3rd Edition. 261 pp. Illus. \$4.50. D. Van Nostrand Company, Inc. 250 Fourth Avenue, New York 3, New York.

"Mathematical Methods for Population Genetics" by Gunnar Dahlberg, Head, State Institute of Human Genetics, Uppsala, Sweden. 190 pp. Tables. Approx. \$4.50. Interscience Publishers Inc., 215 Fourth Avenue, New York 3, New York.

"Oil Shales and Shale Oils" by H. S. Bell. 160 pp. Illus. \$4.00. D. Van Nostrand Company, Inc., 250 Fourth Avenue, New York 3, N. Y.

"Handbook of Scientific and Technical Societies of the United States and Canada." Fifth edition. 1948. Covers 1302 organizations in the U. S. and 166 in Canada. \$5.00. Publication Office, National Research Council, 2101 Constitution Avenue, Washington 25, D. C.

"The Science of Plastics. Vol. 1". Edited by H. Mark and E. S. Proskauer, et al. 640 pp. Illus. \$9.00. Interscience Publishers, 215 Fourth Avenue, New York 3, N. Y.

Booklets

"Industrial Project in Statistical Quality Control" a report of a research and training project conducted by the Syracuse University Institute of Industrial Research, in cooperation with the Syracuse Chapter of the American Society for Quality Control, under authorization and appropriation from the United States Department of Commerce. Available from the Office of Technical Services of the United States Department of Commerce, Washington, D. C.

"Trade Association Industrial Research," a 64-page booklet describing how associations finance research; select technical committees; coordinate research programs; and disseminate findings. 25-cents from Superintendent of Documents, Washington 25, D. C. or field offices of the Department of Commerce.

"Calco Color Announcement of Calconyl Double Solutions." Leaflet describing new line of dyes recommended for cotton and viscose printing. Available from Advertising Department, Calco Chemical Division, American Cyanamid Company, Bound Brook, N. J.

"German Technical Data on Hydrocarbon Chemistry." List of translations in English covering the oxidation of paraffin wax; ethylene oxide by the oxidation of ethylene, and synthetic lubricating oils from pure hydrocarbons. Request it from Mapleton House, 5415-17th Avenue, Brooklyn 4, N. Y.

"The Psychological Corporation. Annual Report 1947." Includes information about Industrial Division activities. Information may be requested from the corporation at 522 Fifth Avenue, New York 18, N. Y.

"Technical Service Report R-6." Eight-page information sheet on new rubber softener—Witco No. 30. Request it from L. H. Cohan, Director of Technical Service Laboratory, Witco Chemical Company, 295 Madison Avenue, New York 17, New York.

"New AMF OAKES Continuous, Automatic Mixer," information sheet. Request it from American Machine and Foundry Company, 485 Fifth Avenue, New York 17, New York.

"Sales-Price Restrictions and Patent Licenses," a review of the opinions of the U. S. Supreme Court in *United States v. Line Material Company* and *United States v. United States Gypsum Company*. By George E. Folk. National Association of Manufacturers, 14 West 49th Street, New York 20, N. Y.

"Trade Association Opportunities in Marketing Research," 80-page guide issued by the U. S. Department of Commerce. Price 25 cents. Order from Department of Commerce field offices or from the Superintendent of Documents, Washington 25, D. C.

"Parlon — Hercules Chlorinated Rubber." Revised 44-page technical booklet. Hercules Powder Company, Wilmington, Delaware.

"Precision Solution Dispenser." Information sheet on new solution dispenser. Request it from Precision Scientific Company, 3737 W. Cortland Street, Chicago 47, Illinois.

"How to Sell your Product to the Government," an outline of purchase procedure. By Sol C. Bennett. Reprint from *Printers' Ink*. Available from Sol C. Bennett & Associates, Inc. Dupont Circle Building, Washington D. C.

"New No. 44 Process Template." Descriptive sheet. Rapidesign, Inc., P. O. Box 592, Glendale, Calif.

Addresses Wanted

The following members of THE AMERICAN INSTITUTE OF CHEMISTS are listed as "Address Unknown." If you know the present addresses of any of these, it will be appreciated if you will send them to the Secretary of the A.I.C., at 60 East 42nd Street, New York 17, N. Y.:

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Former address: Wilmington Chemical Corp., Wilmington 2, Delaware

Dr. Leslie J. Todd, F.A.I.C.

Former address: Indiana University, Bloomington, Indiana

Leon Zolondek, A.A.I.C.

Former address: 1694 Prospect Place Brooklyn, N. Y.

Morgan Becomes Vice President

Dr. D. P. Morgan, F.A.I.C., has been appointed vice-president in charge of the development department of Mathieson Chemical Corporation, whose headquarters are in New York, N. Y.

Berne-Allen Heads College Department

Dr. Allan Berne-Allen, F.A.I.C., is now head of the Department of Chemical Engineering of The Clemson Agricultural College, Clemson, South Carolina.

Furman Receives Fisher Award

Dr. N. Howell Furman of Princeton University was the first recipient of the annual A.C.S. Fisher Award at the Fall Meeting of the American Chemical Society.

The symbol honoring Dr. Furman's achievements in analytical chemistry is an etching which was made and appropriately inscribed especially for the purpose. Dr. Furman also received a prize of \$1,000.00.

In a recent "Cavalcade of America" radio program, E. I. du Pont de Nemours and Company, featured "The Enlightened Professor," honoring Benjamin Silliman who conceived and executed the Science School at Yale University. Franchot Tone played the part of Benjamin Silliman.

Spectroscopy Meetings

The Society for Applied Spectroscopy announces that its meetings will be held on the following dates:

October 5, 1948. Speaker, Dr. Van Zandt Williams, "Developments in Infrared Absorption Spectrometry."

November 9, 1948. Speaker, Dr. Lester W. Strock. Title to be announced.

December 7, 1948. Speaker, Dr. Wallace A. Brode. "Ultra-violet Absorption Spectroscopy."

January 4, 1949. Speaker to be announced.

February 1, 1949. Speaker, Dr. F. Nolan, "Fluorescence in the Field of Spectroscopy."

All meetings will be held at the Lecture-Hall, Old World Building (Socony Vacuum Training Center), 63 Park Row, New York, N. Y., at 8:00 p. m.

New Synthetic Wax

H. Bennett, F.A.I.C., president of Glyco Products Co., Inc., Brooklyn, N. Y., announces that a new synthetic wax, Acrawax C Dispersion S-933, is superior to paraffin for the treatment of cotton duck liners used in curing sponge rubber.

Married

Dr. Elizabeth B. Glaser, F.A.I.C., was recently married to Mr. Leo See. Their new address will be c/o E. D. Sassoon Banking Company, P. O. Box 601, Shanghai, China.

New York Chapter Meetings

October 20, 1948.

Banquet in honor of Dr. Charles Lathrop Parsons, Honorary Member. Joint meeting with New York Section, American Chemical Society, and American Section, Society of Chemical Industry. Downtown Athletic Club, New York, N. Y. 7:00 p. m.

December 9, 1948.

Informal Discussion Meeting. George Washington Hotel, New York, N. Y.

January 27, 1949.

Dinner Meeting. Downtown Athletic Club, New York, N. Y.

March 24, 1949.

Informal Discussion Meeting. George Washington Hotel, New York, N. Y.

May 18, 1949.

Dinner Meeting. Downtown Athletic Club.

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Condensates

Ed. F. Degering, F.A.I.C.

Dr. Duggar, of the Lederle Laboratories, reports the discovery of a new antibiotic, Aureomycin, which is strikingly effective on lymphogranuloma and complicated ocular infections. Inasmuch as most phases of these diseases are caused by viruses, it is concluded that Aureomycin may be effective against virus-based infections, which to date are not affected by either penicillin or streptomycin.

Although science has not given us the Elixir of Life, the scientific war on disease has added eighteen years to life expectancy.

Chloromycetin, developed by Parke-Davis Research Laboratories, may take its place with Penicillin and Streptomycin as one of the greatest contributions to the field of antibiotics. It promises to fill a gap in the treatment of several diseases caused by viruses for which there has never been adequate therapy. It has unique stability and oral effectiveness which make it an outstanding product.

Pentachlorophenol (Monsanto Santophen 30), when properly used, is reported to give complete protection against termites.

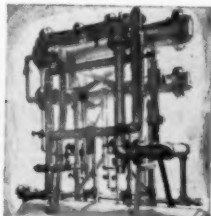


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TO

Dr. Charles Lathrop Parsons

JOINT MEETING WITH

THE NEW YORK SECTION, AMERICAN CHEMICAL SOCIETY
AND THE AMERICAN SECTION, SOCIETY OF CHEMICAL INDUSTRY

Wednesday, October 20, 1948, at 7:00 P.M.

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Please arrange to seat this party at the table with _____

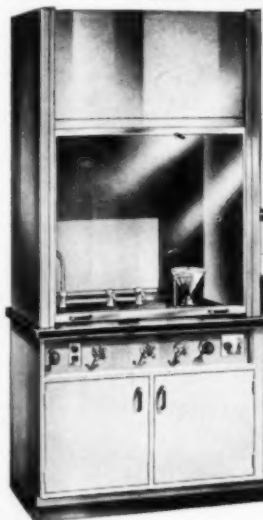
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